

CLAIMS

What is claimed is:

1. A method for predicting the current frame of data in a digital coding system wherein a signal is segmented into frames of data that are sequentially encoded, said system including a base layer and an enhancement layer, said base layer including a base encoder and a base decoder, said enhancement layer including an enhancement encoder and an enhancement decoder, said base decoder producing a reconstructed signal, said enhancement decoder producing an enhanced reconstructed signal, said method comprising the steps of:

predicting the current frame of data at the enhancement-layer by processing and combining the reconstructed data representing the current base layer frame and the reconstructed data representing the previous enhancement layer frame.

2. A method for scalable predictive coding of a signal, comprising the steps of:

(a) encoding data representing said signal with a base layer predictive coding system that provides a first prediction of said signal and information indicative of a decoded base layer approximation to said signal;

(b) encoding data representing said signal by a first enhancement layer which performs predictive coding with a second prediction of said signal derived from a combination of information from the base layer and information indicative of the past decoded signal approximation generated in said first enhancement layer.

3. A method as recited in claim 2, wherein the step of encoding said signal data with said enhancement layer comprises the steps of providing to said first enhancement layer compression parameters from the base layer to aid in the computation of said second prediction.

4. A method as recited in claim 2, wherein the step of encoding said

signal data with said first enhancement layer comprises the steps of providing to said first enhancement layer time evolution statistics derived either by off-line computation or by computations using quantized parameters of said signal.

5. A method as recited in claim 2, wherein said coding system includes a second enhancement layer and wherein said second enhancement layer performs predictive coding with a third prediction of said signal derived from a combination of information from said first enhancement layer and information indicative of the past decoded signal approximation generated in said second enhancement layer.

6. A method as recited in claim 2, wherein said second prediction at predetermined intervals is derived exclusively from information from the base layer and at all other times is derived by combining information from the base layer and information indicative of the past decoded signal approximation generated in said first enhancement layer.

7. An apparatus for predicting the current frame of data in a digital coding system wherein a signal is segmented into frames of data that are sequentially encoded, said system including a base layer and an enhancement layer, said base layer including a base encoder and a base decoder, said enhancement layer including an enhancement encoder and an enhancement decoder, said base decoder producing a reconstructed signal, said enhancement decoder producing an enhanced reconstructed signal, comprising:

means for predicting the current frame of data at the enhancement-layer by processing and combining the reconstructed data representing the current base layer frame and the reconstructed data representing the previous enhancement layer frame.

8. An apparatus for scalable predictive coding of a signal, comprising:

(a) means for encoding data representing said signal with a base layer predictive coding system that provides a first prediction of said signal and information indicative of a decoded base layer approximation to said signal;

(b) means for encoding data representing said signal by a first enhancement layer which performs predictive coding with a second prediction of said signal derived from a combination of information from the base layer and information indicative of the past decoded signal approximation generated in said first enhancement layer.

9. An apparatus as recited in claim 8, wherein said means for encoding said signal data with said enhancement layer comprises means for providing to said first enhancement layer compression parameters from the base layer to aid in the computation of said second prediction.

10. An apparatus as recited in claim 8, wherein said means for encoding said signal data with said first enhancement layer comprises means for providing to said first enhancement layer time evolution statistics derived either by off-line computation or by computations using quantized parameters of said signal.

11. An apparatus as recited in claim 8, further comprising a second enhancement layer, wherein said second enhancement layer performs predictive coding with a third prediction of said signal derived from a combination of information from said first enhancement layer and information indicative of the past decoded signal approximation generated in said second enhancement layer.

12. An apparatus as recited in claim 8, wherein said second prediction at predetermined intervals is derived exclusively from information from the base layer and at all other times is derived by combining information from the base layer and information indicative of the past decoded signal approximation generated in said first enhancement layer.

13. A scalable predictive coding system for compressing a signal, comprising at least one enhancement layer and at least one lower layer, wherein prediction in an enhancement layer combines information from a lower layer with

information from the enhancement layer.

14. A scalable predictive coding method for compressing a signal in system comprising at least one enhancement layer and at least one lower layer, the method comprising the steps of performing prediction in an enhancement layer by combining information from a lower layer with information from the enhancement layer.